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- Water-soluble antibiotic composition and water-soluble salts of new cephem compounds.
- (g) A water-soluble antibiotic composition which comprises crystals of a cephem compound of the following formula:

wherein R<sup>1</sup> is a residue of an aliphatic hydrocarbon which may have suitable substituent(s), and R<sup>2</sup> is a heteronio(lower)alkyl, or an acid addition salt thereof, and a pharmaceutically acceptable carbonic acid salt. The invention also relates to a salt comprising cation(s) and anion of the formula:

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wherein R¹ is a residue of an aliphatic hydrocarbon which may have suitable substituent(s). R² is a heteronio(lower) alkyl, a process for preparing such salt and pharmaceutical composition comprising it.



## **EUROPEAN SEARCH REPORT**

88 11 2910

	Citation of document with in	ndication, where appropriate,	Relevant	CLASSIFICATION OF TH	
Category	of relevant pa	ssages	to claim	APPLICATION (Int. Cl. 4)	
A	FR-A-2 445 833 (SO BIOLOGIE) * Complete specific		10-19	A 61 K 31/545 C 07 D 501/46	
A	FR-A-2 124 499 (SQ * Complete specific		1-9		
Α.	US-A-4 241 057 (KE * Complete specific	NZO ISHIZUKA et al.) ation *	1-9		
A	EP-A-0 099 553 (FU * Claims *	JISAWA)	10-19		
A	US-A-4 161 527 (KE * Complete specific	NZO ISHIZUKA) ation *	1-9		
				TECHNICAL FIELDS SEARCHED (Int. Cl.4)	
		•		SEARCHED (Int. C. 4)	
				A 61 K 31/545 C 07 D 501/46	
			4		
	The present search report has l			Framina	
TH	Place of search E HAGUE	Date of completion of the search 12-09-1990	LUY	Examiner TEN H.	
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